

In the title:

Please delete the original title and replace with the following title:

5 --VEHICLE MIRROR SYSTEM FOR PROVIDING VIEWS ALONG A SIDE
AND A BLIND-SPOT OF A VEHICLE.--

In the specification:

Please amend paragraphs [0043] to [0052] on page 3 of US 2006/0034005 as shown below:

5 [0043] FIG. 9 is a perspective schematic view of one embodiment of a left side-viewing device of the mirror system of FIG. 6 according to the present invention.

[0044] FIG. 10 is another schematic view of the left side-viewing device of FIG. 9 with the left and topside exposed.

10 [0045] FIG. 11 is a schematic perspective view of another embodiment of a left side-viewing device according to the present invention with the left side exposed.

[0046] FIG. 12 is another schematic view of the left side-viewing device of FIG. 11 with the left and topside exposed.

15 [0047] FIG. 13 is a schematic perspective view of one embodiment of a right side viewing device of the mirror system of FIG. 6 according to the present invention with the topside exposed.

20 [0048] FIG. 14 is a schematic view in partial cross section of the right side viewing device of FIG. 13.

[0049] FIG. 15 is a schematic perspective view of another embodiment of a right side viewing device of the mirror system of FIG. 6 according to the present invention.

[0050] FIG. 16 is schematic plan view in cross section of the

right side viewing device of FIG. 15;

[0051] FIG. 17 is schematic view of the optical elements of another embodiment of a right side viewing device according to the present invention;

5 [0052] FIG. 18 is a schematic perspective view of another embodiment of an automobile side mirror equipped with a retractable blind spot mirror of the present invention;

Please amended paragraph [0056] of page 3, as shown below:

10 [0056] With reference to FIG. 1 the typical viewing areas and identification of the blind spots C, D to the left and right of the vehicle A are illustrated. In the subject vehicle A, conventional side view mirrors M1, M2 on the left and right side of the vehicle A permit a driver to see the area
15 designated B. The areas C and D on the left and right side of the subject vehicle A are characterized as the blind spots. The driver of subject vehicle A will not be able to see vehicles E or F using the conventional side view mirrors as they are in the blind spot. In order for the driver of vehicle A to check the
20 blind spots on the left and right side of his vehicle, the driver must turn his head to the side and rear to see directly to the blind spot to ensure no vehicles are present. For the right side blind spot the driver has to turn his head to his right to an angle of around 120 degrees in order to check the blind spot. For the left side blind spot the driver has to turn his head to at least 90 degrees in order to check the blind spot. The driver must do these two head movements in sequence
25 and hi split second timing in order to ensure his safety and the

traffic on his sides before proceeding in changing lanes in a highway. The major advantage of the design of the present invention is that it minimizes the amount a driver must turn his head to the side and rear to see to the side and rear to ensure no vehicles are present.

5 Please amended paragraph [0060] of page 4, as shown below:

[0060] The ray diagram in FIG. 2 illustrates schematically how incident light is reflected through a right angle triangular glass prism P1 with two sides S1, S2 of equal length and two vertices V1, V2 of equal angles (i.e. 45) so that it can be used to view objects at 90 to the side of the prism. The right angle prism P1 may have the exterior surface of its hypotenuse H coated with an opaque or reflective coating to block ambient 10 light from back lighting the prism. Incident light L1 from an object (not shown) to the left of the prism P1 hits the surface of the first of the two equal sides S1 of the prism perpendicular to its surface. The incident light L1 is not refracted (bent) because it is entering the prism perpendicular 15 to the surface. The incident light then strikes the ulterior surface of the hypotenuse H at 45 degrees, an angle greater than the critical angle for glass. Rather than being refracted and leaving the prism, the light L1 is totally reflected at 45 degrees to the second of the two equal sides S2 of the prism 20 P1. The reflected light is perpendicular to the surface of the second of the two equal sides S2. The reflected light exits the prism at right angles to the surface of the second of the two equal sides, so again there is no refraction or dispersion. The 25 eye of the viewer (not shown) looking at side S2 sees the object in the second of the two equal sides S2 of the prism.

The image of the object appears to the eye as it appears (no distortion) and at real distances but rotated 180.

5 Please amended paragraphs [0062] - [0066] of page 4, as shown below:

[0062] For example FIG. 3 shows how a flat mirror R1 placed at an, angle to the surface of the first of the two equal sides S1 of the right angle prism P1 can be used to view objects (not shown) to the left and rear of the prism P1. For example if the 10 flat mirror R1 is placed at an angle of 60 degrees as shown in FIG. 3, when looking at the surface of the second of the two equal sides S2 of prism P1. objects behind and in a field of vision 60 degrees to the surface of the first of the two equal sides S1 of the prism, can be seen. By making the two sides S1, 15 S2 equal length, the size of the field of vision matches the size of area that can be seen in the second side.

[0063] If the flat mirror R1, in FIG. 3, is placed at an angle of 45-50 degrees (as shown in FIG. 4), when looking at the 20 surface of the second of the two equal sides S2 of the prism P1, objects behind and in a field of vision about 45 to 50 degrees to the surface of the first of the two equal sides S1 of the prism P1, can be seen. The flat mirror R1 can be replaced by a second right angle prism P2 having two sides of 25 equal length to see to the rear as shown in FIG. 4A.

[0064] The field of view can be expanded in either FIG. 3 or 4 by utilizing in combination with the right angle prism P1 and 30 flat mirror R1 (or second prism) a diverging lens DL as shown in the ray diagram in FIG. 5. In FIG. 5 a plano concave lens DL placed between the flat mirror R1 and the object (not shown) to the rear expands the field of vision. The use of a divergent

lens will cause some distortion in the image of the object as it appears in a first part VS1 of the surface of the second of the two equal sides S2 of the prism, which may not be desirable. In FIG. 5 a second flat mirror R2 is provided similar to the arrangement in FIG. 3 and objects to be left and rear of the prism are seen in a second part VS2 of the surface of the second of the two equal sides S2 of the prism.

[0065] In FIGS. 6 to 8 one embodiment of a mirror system (shown schematically), generally indicated at 1, attached to an automobile 2 according to the present invention is illustrated. The conventional side view mirrors have been replaced with left and right viewing devices 3,4 installed on to the automobile 2 to provide a view 5 to the rear along the side of the vehicle and also to enable a driver to see if another vehicle is in the blind spot 6 as shown in FIG. 8. The right and left viewing devices 3, 4 are preferably mounted in the driver side and passenger side doorframes, 7, 8 of the automobile in front of the driver's position 9 at the bottom 10, 11 of windows 12, 13. In this embodiment the viewing surfaces of the left and right viewing devices 3,4, are moved into the vehicle. This allows the driver to see more directly into the "side view mirrors" in order to see along the side and to the rear of the vehicle without turning his head.

[0066] FIGS. 9 and 10 illustrate schematically one embodiment of the left viewing device 3, of the type shown in FIGS. 6-8 for installation on the driver's side doorframe 7. In this embodiment the left viewing device 3 is located in a mirror housing 14 adapted for mounting on the doorframe of the vehicle. The configuration of the mirror housing and its method of attachment to the doorframe can vary without departing from

the scope of the invention. The mirror housing 14 has a first section 15 containing a viewing surface in the interior of the vehicle 2 and a second section 16 optically open to the outside of the vehicle.

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Please amended paragraph [0068] of pages 4-5, as shown below:

[0068] As best seen in FIG. 10, the first section 15 of the mirror housing 14 is sized and shaped to contain operative 10 optical elements comprising one or more right angle triangular prisms. In FIGS. 9 and 10 a single right angle triangular prism 17 with two sides 18, 19 of equal length and two vertices 20, 21 of equal angles (i. e. 45) is shown. The prism 17 is mounted in the first section 15 of the mirror housing 14 so that one 18 of the two sides of equal length of prism 17 is positioned in an 15 opening 22 to provide a viewing surface 23. The second one 19 of the sides of equal length is facing to the left. In the embodiment illustrated a prism with two sides of equal length is utilized in order to optimize the field of vision in the 20 viewing surface. Further a right angle triangular prism having two vertices of equal angles (i. e. 45) is used in order to obtain total reflection of the incident light from the left 25 side of the prism. As noted the critical angle for glass is about 42 degrees. While small variation in the geometry of the prism maybe possible (plus or minus 1 to 2 degrees from the right angle), if the incident light from the left side of the prism hits the second one 19 of the sides of the prism at other than perpendicular it will be refracted about 1.5 degrees for each degree from perpendicular. This results in the refracted 30 light in the prism hitting the far side 24 (hypotenuse) of the

prism at an angle other than 45 degrees. If the angle is less than 42 degrees the light will pass through the prism rather than being reflected to the viewing surface. In the embodiment shown one right angle prism is utilized however two or more 5 prisms stacked on top of each other, end to end, could be utilized. In the embodiment shown, viewing surface 23 is about 8 cm wide by 18 cm high, although different dimensions can be used without departing from the scope of the invention. The third side 24 of prism 17 connecting the vertices 20,21 (i. e. 10 the hypotenuse) preferably has its external surface 25 coated with an opaque or reflective material to block light from back lighting the images appearing in the viewing surface 23. The prism 17 may be mounted in a manner to permit adjustment of the prism to accommodate drivers of different sizes however the 15 inventor has determined that if the left viewing device 3 is positioned in front of the driver and at the bottom of the window in the door at the height of the dashboard, adjustment is normally unnecessary and the prism can be fixed in position.

20 Please amend paragraph [0071] of page 5, as shown below:

[0071] FIG. 10 shows the pivot axle 31 for the second flat mirror.